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[redacted] STEREOSCOPE STATINTL

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The [redacted] Stereoscope is a desk top instrument for the stereoscopic study of 70mm, 5" and 9-1/2" film. It covers the magnification range from 3X to 120X. [redacted]

Basically, the instrument consists of a zoom power pod, three relay lens systems, a focusing arm, and a scanning base. It is equipped with a number of special features to make the photo interpreter's job easier, his work extremely precise.

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The Zoom Power Pod

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The power pod uses the zoom optics of the [redacted] Microscope. Power pod magnification is .7X to 3X. There are two identical optical trains each of which consists of an eyepiece, de-rotation prism assembly, prism cluster, and dual zoom elements. STATINTL

Ten-power wide-field eyepieces are used in the [redacted] Stereoscope. They offer an eye relief of approximately 22mm, permitting comfortable use by persons wearing glasses. One eyepiece tube is focusable, enabling the observer to balance the acuity of his eyes. By using a single eyepiece magnification, the system is able to achieve the maximum ratio of resolving power to magnification. STATINTL

The de-rotation prism assembly is a [redacted] prism in a rotating mount. As the assembly is rotated with respect to the object, the image is rotated through twice the prism rotation angle. Total image rotation is 360°. Index marks are provided to locate the non-rotated position. STATINTL

The prism cluster brings the image from the zoom elements to the eyepiece in the proper orientation for viewing. The cluster also permits the eyepieces to be adjusted for interpupillary distance (a lock screw is provided so that eyepiece spacing can be locked in any set position between 60mm and 72mm).

The three-element zoom system varies the magnification in a ratio of 4:1. The operator can drive the two zoom trains in unison, or each one individually.

The Relay Lens Systems

The complete magnification range from 3X to 120X is achieved by interchanging three relay systems on the instrument power pod. The .43X low-power relay covers the range from 3X to 12.9X; the 1X medium-power relay covers the range from 7X to 30X; the 4X high-power relay covers the range from 28X to 120X.

Each of the relay systems consists of a pair of rhomboid arms which house the optical components of the system. The relay is mated to the power pod by means of a dove slide for precise repetitive alignment and convenient interchangeability. During final assembly, each relay is aligned to the power pod it will be used with to insure optimum performance.

Mechanical design of the relay systems permits viewing the formats of 2-1/4" x 2-1/4" on 70mm film, 4-1/2" x 4-1/2" on 5 inch film, and 9" x 9" on 9-1/2" film. By rotation of the rhomboid arms, maximum and minimum conjugate image separation are accommodated.

Each rhomboid arm is equipped with a ball tipped pointer which can be positioned in or out of the field of view. The pointer allows the operator to quickly make a coarse centering of the fields of view by direct visual observation.

When the rhomboid arms have been placed in the desired position, they can be locked in that position. If further fine adjustment is required, it can be made by rotating a tangent screw on each rhomboid arm.

The Focusing Arm

The focusing arm holds the versatile stereoscope pod and houses the focus control. A coarse focus for rapid positioning, and a fine focus for detail work are provided. Working distance (minimum) from film plane to bottom of rhomboid is 2-1/4" for the low-power relay, 2-3/4" for the medium-power, and 1" for the high-power. In any given range the working distance will be fixed. This permits the operator to change magnification throughout the range without refocusing.

To facilitate focusing when the 4X relay system is in use, this rhomboid pair is equipped with an auxiliary fine focus. This permits parfocalizing the left and right optical trains to compensate for non-uniformity in the film plane. The low-power and medium-power relay systems have been factory parfocalized, and, because of their greater depths of field, further adjustment is not necessary.

The Scanning Stand

This stand provides scanning in one direction. It can be positioned to scan either along or across the direction of film motion. Four adjustable legs are provided so that the stand can easily be leveled on a light table.

Normal usage of the instrument will position the stand so that it can be used to scan in the Y direction. In this orientation, scan in the X direction is accomplished by advancing the film. The stand is supplied with a brake lever so that the scanning mechanism can be locked into any desired position.

Protective bumpers prevent the 4X rhomboid from hitting the stand during a scanning operation. All edges of the stand which might come in contact with the film are smoothed and polished to protect the film from possible damage. Hand holds are provided on the stand to facilitate transporting and positioning of the stand.

Zoom Control

The zoom change is controlled by three knobs. A large center knob varies the magnification of both optical systems simultaneously. When this knob is disengaged, each zoom system can be varied independently by its respective control knob. To return from individual to dual control of magnification, the operator simply places both systems at the lowest magnification and engages the center knob.

Carrying Case

A sturdy carrying case for transporting and storage of the power pod and rhomboid arms is provided as standard equipment.

Next 2 Page(s) In Document Exempt